FINAL REPORT

THE ORIENTATION AND MOBILITY INSTRUCTION OF BLIND PEOPLE

October 1, 1963 - October 31, 1966

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FINAL REPORT

of a

DEMONSTRATION PROJECT

conducted in

Pulaski County, Arkansas

October 1, 1963 - October 31, 1966

"THE MOBILITY AND ORIENTATION INSTRUCTION OF BLIND PEOPLE"

Sponsored and operated by
The Arkansas Enterprises for the Blind, Inc.
2811 Fair Park Boulevard
Little Rock, Arkansas

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CHAPTER I

INTRODUCTION

A. SETTING AND BACKGROUND INFORMATION

The Arkansas Enterprises for the Blind, Inc. is a private agency which serves the adult blind. The facility, founded in 1947, is operated as a non-profit organization financed from fees charged for services and by the Lion's Clubs of Arkansas. During its 19 years of operation the facility has provided services to approximately 1500 adult blind persons from 32 states and 5 foreign countries. The majority of these persons were from Arkansas and Oklahoma, Missouri, Mississippi, Tennessee, and Louisiana.

The Center, as the facility is commonly known, has its own dormitories and can accommodate 70 trainees at any given time. The trainee usually remains at the Center for a period of from four to six months and receives the following services:

1. Training in daily living activities which includes instruction in self care, cleanliness, personal grooming, posture, care and selection of clothes, care of laundry, housekeeping, food preparation and planning budget.

2. Mobility training: The development of the confidence and ability necessary for independent travel using cane techniques.

3. Social adjustment: Social experience with peer groups, social etiquette, table manners, handling of interpersonal relationships, and other aspects of every day living.

4. Communicative skills: Training in script writing and typing, instructions in the use of Braille, use of talking books, tape, radio and telephone, use of Braille writer, slate and stylus.

5. Craft and Shop Training: Work and training are offered in these areas as needed specifically to aid in evaluation of confidence, work tolerance and dexterous performance.

6. Counseling Services with Reference to personal adjustment: This service is provided by the psychologist, social worker, psychiatrist, or other members of the staff.

7. Optical Aids: Often the low vision trainees are screened to determine whether or not optical aids can improve the use of the remaining sight. Fitting and training in the use of such aids is also provided where indicated.

8. A Psychiatric Evaluation is given each trainee as a part of the total Center services.

9. A Psychological Evaluation is given each trainee and its results are made available to the referral agency.

10. Medical Evaluations are given each trainee for the guidance of the trainee, the Center staff, and the referral agency.

The majority of the trainees who come to the Center are clients of various State and Private Agencies in Arkansas and its neighboring States, principally state rehabilitation services for the blind. Monthly progress reports are submitted to the referring agency, covering the trainee's progress in the various training activities listed above. These reports give the referring rehabilitation counselor the results of the psychological tests and the trainee's progress in attaining the basic skills necessary for a person to live independently without sight. Any other information which might be helpful to the counselor and trainee in attaining a vocational objective is also included.

The Arkansas Enterprises for the Blind, Inc. located in Little Rock, Arkansas, is the only facility in Arkansas which offers a blind person specialized training in these skills. Training in mobility and orientation has long been provided to the adult blind who are referred to the Center by the various agencies throughout the country but this service was not available to the students at the Arkansas School for the Blind. The Center and the school has shared a concern for training students by jointly conducting workshops of mobility training for teachers employed by the Arkansas School for the Blind. Concern was also felt for some 715 blind persons residing in Pulaski County, as reported by the Registror of the Blind, many of whom needed a proficient skill in mobility and orientation. Therefore, the problem as seen by the School and Center staff was how to provide mobility training to a portion of the 144 students enrolled in the Arkansas School for the Blind and to some of the persons residing in the Pulaski County area who could not come to the Center for total services.

Early in 1962 the officials of the School for the Blind, the Division for the Blind in the Arkansas Rehabilitation Services, and the Arkansas Enterprises for the Blind met to discuss the feasibility of developing and expanding mobility training within the county area. These individuals were interested in the problem of considering the feasibility of providing valid mobility and orientation training for the students of the Arkansas School for the Blind and to the Rehabilitation

Service clients who could not avail themselves of other services but yet needed mobility and orientation training. This conference recommended that the Arkansas Enterprises for the Blind, Inc. apply for and conduct a demonstration and research project in the area of mobility and orientation training.

The project provided that a trained orientation and mobility instructor whose offices would be at the Arkansas Enterprises for the Blind would be employed. He would provide training to a selected number of students at the Arkansas School for the Blind, and to persons referred by the Arkansas Rehabilitation Services. One half his time would be spent with the students of the Arkansas School for the Blind, beginning with the older students who qualified and the other half of his time would be spent training clients referred for this specific service by the Arkansas Rehabilitation counselors and case workers. The service to individuals referred by the Rehabilitation Services would be provided at their homes. It was further agreed by the officials of the 3 agencies that the instructor would spend none of his time with trainees enrolled at the Arkansas Enterprises for the Blind. His entire time would be spent in working in the training of the students at the Arkansas School for the Blind or of those residents of Pulaski County who were referred by the Arkansas Rehabilitation Services.

B. THE PURPOSE OF THE PROJECT

The project was approved by the Vocational Rehabilitation Administration and began operation on October 1, 1963. The goal of the project was to demonstrate the value of the systematic teaching of validated skills in mobility to blind persons who had not previously had such training and to measure the results of the training program. It was designed to:

1. Assist blind people to develop their maximum capacities for independent mobility.
2. Help blind persons, through training in mobility skills, to become motivated toward more intensive efforts to seek and secure all the services offered by the Rehabilitation Agencies of the State.
3. Demonstrate to key officials and other workers with the blind that results that can be obtained by using proven techniques and trained instructors in the teaching of mobility.

4. Promote and to extend the belief that specialized training in mobility skills is an integral part of professional work for the blind.

5. Add to the growing body of knowledge in the field of such training through the interpretation of the project results.

CHAPTER II

THE PROJECT PROGRAM

A. THE PROJECT PERSONNEL

The Executive Director of the Arkansas Enterprises for the Blind, Inc. was designated as the Project Director. His responsibilities were the overall supervision of the project staff, the compiling and submitting of reports, both annual and final to the Vocational Rehabilitation Administration, and to maintain a direct line of communication between the Arkansas Rehabilitation Services for the Blind, the Arkansas School for the Blind, and the Vocational Rehabilitation Administration.

A trained mobility instructor was employed who was a graduate of Western Michigan University with a master's degree in orientation and mobility. It was believed by the officials of the three agencies involved in the project that a person with this level of education should be employed since he would be better qualified to assume his role as a rehabilitation team member, he would be better able to understand the emotional and social problems involved in training of mobility and orientation, and would have a better orientation in the area of research and research methods. However, after one year this instructor took another position and it was impossible to secure another person with a master's degree from one of the two schools which offer degrees in mobility and orientation. Therefore, the project director and the officials of the other two agencies in concurrence with the Vocational Rehabilitation Administration employed a mobility instructor with 6 years experience in mobility instruction at the Arkansas Enterprises for the Blind with a Bachelor of Arts degree in Psychology and Sociology. This instructor remained on the project until its termination.

A professional social worker was made available to the project for consultation on individual cases throughout the operation of the project. The social worker also was responsible for the follow-up interviews at the termination of the project. The services of a psychologist was also made available when such services were indicated. The chief mobility instructor of the Arkansas Enterprises for the Blind, an individual with 16 years of experience in mobility training, was also available for consultation.

B. REFERRAL PROCEDURE AND ELIGIBILITY

After the project was funded the officials of the Arkansas Enterprises for the Blind, Inc., the Arkansas School for the Blind, and the Arkansas Rehabilitation Services for the Blind, along with the project staff had several meetings in which final decisions were made concerning

the actual operation of the project. Referrals to the project for training would be made by the professional staff members of the Arkansas Rehabilitation Services for the Blind and by the Supervisory Staff of the Arkansas School for the Blind. The project staff would assume the responsibility for evaluating the referrals and would select candidates for the training program by the following criteria:

1. Candidates selected for training were to be legally blind or sufficiently visually impaired that they did not have guiding vision. No exact minimum Snelling measurement was used for screening since visual efficiency varies widely among individuals according to the length of time of the blindness, motivation, the use of remaining vision, field restriction, and many other factors. The visual handicap was established by an ophthalmological report, and in borderline situations, the facility's Optical Aids Clinic was used to determine the degree of visual loss.

2. The candidates were to have a measured intelligence level of 75 or above as indicated by standardized psychological tests. Exceptions could be made to this criterion if a person referred seemed to function near normal ability but was so socially or culturally deprived that he was not able to respond in a test situation. These exceptions were made only on the written recommendations of a qualified psychologist.

3. The candidates were required to have a current, general medical examination to verify that they were physically able to pursue a mobility program. No minimal or maximum age limit was set but note was taken of Dr. R. E. Hoover's experimental work with mobility training for children and his opinion that teenagers, with their growing motivation toward independence, are most receptive to instruction. Candidates were required to have sufficient hearing ability to communicate verbally with the instructor, and audiological reports were secured at the beginning of the training so that the instructor would have the benefit of this information in order that he might individualize instructions as indicated.

4. The candidates were to show motivation toward the learning of mobility skills and to be assessed to have rehabilitation potential. It was not required that they be active clients of the Arkansas Rehabilitation Services for the Blind or students enrolled at the Arkansas School for the Blind, but it was essential that they be considered potentially feasible clients for either of these agencies.

The project social worker reviewed applications to verify motivational level when it appeared that such evaluation was required. The instructor also contacted the potential trainee and arranged for an interview with him prior to his acceptance into the program. This interview served to give the blind individual an opppotunity to ask certain questions concerning the training which the case workers, counselors, and other supervisory personnel had not answered. It also gave the instructor an opportunity to explain the training activities in more detail and to plan a time for instructions. Frequently, this interview was utilized to determine or assess motivation. Some social evaluation was also done at this time. It was frequently noted that the interview seemed to allay much of the anxiety which the prospective trainee might have concerning the training program. If the trainee was a Rehabilitation Service referral, he was to be served in his home community, but he and his family were urged to visit the Rehabilitation Center and observe some of the activities being pursued by other blind trainees.

C. RECORD KEEPING

Once the trainee entered the program the instructors kept daily progress notes pertaining to the individual's training activities. These notes were primarily for the use of the instructor in planning for the trainee's sequential program and did not become a part of his master file. The notes also served as a reference for the writing of monthly narrative progress reports. The monthly reports represented a brief, accurate description of the progress made as well as an outline of the problems being encountered by the trainee. Frequently the instructor, through observation, could make some prediction as to the possible level of proficiency the individual might be able to attain. Three copies of the monthly report were made, one being sent to the referral source, one given to the supervisory head of the department involved, and one filed in the trainee's master file. This copy was kept confidential and only authorized personnel involved in the project had access to it. At the termination of the period of training a final narrative report was written by the instructor in which he outlined the trainee's activities in the program and made an assessment of the level of proficiency that he had attained. This report also included information concerning the trainee's attitude toward the training program and toward more comprehensive rehabilitation or educational services. All medical, social, and psychological reports were submitted in the same procedure. These reports served as a basis for all inter-agency communication, however, often the referring teacher, case worker, or counselor would have specific questions not answered in the narrative report and would inquire by letter concerning them or through personal interviews with the project staff.

In a number of cases, it was also necessary to call upon the referral resource for reinforcement and to assist their client with personal problems which were interfering with his training. These requests for service were promptly attended by the referral persons. At no time during the operation of the project was there a breakdown of inter-agency communications and it is felt that much of the success of the project can be attributed to this one fact.

D. TRAINING METHODS AND PROCEDURES

The training program was arranged into five distinct phases which allowed for sequential planning for the trainee's development. The five phases are as follows--(1) Basic Skills, (2) Cane Skills, (3) Residential and Rural travel, (4) Metropolitan Skills, and (5) Final testing.

The following Lesson Plan gives the sequence of the introduction of the various skills involved in orientation and mobility training and information regarding the specific skills involved. These skills will be described in more detail later in this report.

The Lesson Plan

Orientation and Mobility Training

I. Basic Skills

A. Initial Interview

1. A description of the program
2. Question and Answer Session

B. Initial Evaluation

1. Client's present skills and potential
2. Client's use of his residual vision
3. Client's motivation for training.

C. Lesson one--The Use of a Sighted Guide

1. Purpose of, and Description of the Technique
   a. The grip
   b. The position of the guide and blind person
   c. The blind persons responsibilities
   d. Verbal and non verbal communication
   e. The use of a sighted guide on stairways
   f. The use of a sighted guide through doorways
   g. The use of a sighted guide when seating oneself
   h. The use of a sighted guide and properly entering an automobile.

i. Alternate Techniques
j. Review

D. Basic Orientation Techniques--Lesson 2

1. Purpose and description of the technique
   a. Basic Alignment and Direction Taking
   b. The forearm across the chest
   c. The extension of the lower arm
   d. Trailing walls
   e. Orientation skills for special environments
      1. The bathroom
      2. The Dining areas
      3. Public areas such as auditoriums
   f. Review

E. Basic Sensory Training--Lesson 3

1. Auditory cues
2. Olfactory cues
3. Tactual cues
4. Kinesethic cues
5. Review

F. Unit Review and Testing

II Cane Skills

A. Lesson 4--Introduction of the Cane
   1. Fitting the cane
   2. Description of the cane
   3. Purpose of the cane
   4. Review

B. Lesson 5--The Diagonal Technique and Trailing Technique
   1. Review

C. Introduction of the Touch Method--Lesson 6

1. Indoor practice
2. Review

D. Lesson 7--Basic Techniques of Touch Method

1. Indoor practice
2. Review

E. Lesson 8--Intermediate Cane Skills
   1. Outdoor practice
   2. Review

F. Lesson 9--Advanced Cane Skills
   1. Outdoor practice
   2. Review

G. Basic Sensory Training--Lesson 10
H. Unit Review and Testing

III. Residential and Rural Training
- A. Familiarization and orientation to the immediate area. Lesson 10.
- B. Residential Sidewalk travel. Lesson 11
- C. Lesson 12. Residential Street Crossings
- D. Lesson 13. The use of Landmarks and reference points.
- E. Lesson 14. The location of objectives
- F. Lesson 15. Particular Problem Situations.
- G. Review and Testing.

(During this phase Sensory Training is incorporated into each lesson)

- H. Independent Practice--Lesson 16
- I. Lesson 17--Familiarization and Orientation to Rural Type situations
- J. The use of various types of shorelines. Lesson 18
- K. Crossing Roads and Streets. Lesson 19
- L. Methods of Maintaining Orientation. Lesson 20
- M. The Location of Objectives. Lesson 21
- N. Limit Testing and Review
- O. Independent Practice. Lesson 22

IV Metropolitan Travel
- A. Lesson 23--Orientation and Familiarization to City Busses.
- B. Lesson 24. Orientation and Familiarization to the Area
- C. Lesson 25--Instruction in applicable cane technique
- D. Lesson 26--Independent street crossings
- E. Lesson 27--Review
- F. Lesson 28. Independent travel assignment
- G. Testing
- H. Lesson 29. The location of objectives by utilizing information concerning city numbering system and street patterns.
- I. Lesson 30. The use of elevators, escalator and revolving doors.
- J. Lesson 31. Review
- K. Lesson 32. Independent assignment
- L. Lesson 33. Drop offs
- M. Lesson 34. Personal shopping
- N. Travel in unfamiliar areas. Lesson 35
- O. Lesson 36. Review

V. Final Testing
- A. Lesson 37. A trip to a nearby city by use of busses.

This one lesson might well involve only one instructional period while at another time it might involve as many as five different instructional periods spread over a time of an equal number of days. There was no prescribed time limit in which the trainee was expected to learn a particular skill or even to complete the training program. Instead, each trainee was instructed in each particular skill until he and the instructor felt that he had reached the level of maximum proficiency. The procedures as outlined above were always the same in each particular

case. These procedures were all agreed upon by each of the three participating agencies as the proper sequence of lessons to offer the trainees.

E. TRAINING AIDS

The White Cane

The cane used for each client was the Arkansas Traveler type. This particular cane is made from tapered hollow fiber glass, of a durable quality. It has a case hardened steel tip of three pieces and is attached to the cane by a rivet. The handle is aluminum tubing covered with a protective rubber tape to make it easier to grip. This cane weighs 12 ounces and comes in lengths ranging from 36 inches to 56 inches. It is of a white substance to comply with the existing Arkansas White Cane law, which makes it mandatory that blind persons traveling independently have a white cane or a guide dog.

This particular cane was chosen for use because it was the opinion of the agencies involved that a cane should possess certain desirable qualities which are: (1) Sensitivity, (2) Durability, (3) Rigidity, (4) A good appearance, and (5) lightweight. Tests on more than 500 canes by the trainees at the Arkansas Enterprises for the Blind Rehabilitation Center indicated that this cane had these particular qualities. *(Until 1962 the cane was made from hickory instead of fiberglass, but because of tests, it was felt that the fiber glass best met the qualities indicated above, therefore, the hickory canes were discontinued. It was felt that the specifically designed tip enhanced the sensitivity of the cane since the spring action tended to magnify the vibrations transmitted from the cane to the users hand enabling him to more readily detect changes in the surface. This particular cane was designed by Mr. Oliver Burke, Chief Mobility Instructor, at Arkansas Enterprises for the Blind and Mr. O. H. Standbrough, a machinist, who is blind and is a former trainee of the Center. Mr. Standbrough currently manufactures the canes at Batesville, Arkansas.

During the course of the training program the trainees were given familiarization with other types of canes and allowed to use the V.A. type cane and the fiber glass cane with the glider tip when they desired to do so. It is interesting to note that only three of the total group chose to use the other type canes.

Other Training Aids

The trainees, without exception, were also given information concerning the reliable Dog Guide schools and their training program, policies and procedures. The advantages of both the cane and the dog were also pointed out. The most recent information regarding electronic devices was also disseminated to the participating clients.

Rather extensive use was made of braille maps. Two types were used; those drawn by the instructor by use of the raised line drawing kit distributed by the American Foundation for the Blind, and Standard scale models of specific areas, these models being made from wood. It was found that these aids were most helpful during the earlier phases of the training program. Efforts were made to discourage their use in the advanced phases due to the fact that such aids would not be readily available to the trainee outside the training program. Nevertheless they do serve the client well during the concept development stage.

The sight occludors were also used in selected cases, particularly with those trainees who had some partial vision but not "travel vision". The purpose of their use was to impress the trainee with the fact that there exists, in the environment, certain stimuli to the senses other than vision and thereby facilitate his mobility effectiveness. They were never used in cases where total blindness was inevitable as a means of preparation for eventual blindness. The agency operates on the philosophy that it is impractical, if not unsound, to attempt to rehabilitate a person beyond the degree of his handicap, therefore such an effort would have accomplished little. The trainee was encouraged to use his residual vision in the most effective way when traveling and was instructed in such skills as locating traffic lights, crosswalks, and identifying business places by their displays. In cases where the occludors were used, training was initiated with the use of the trainee's sight, he was then blindfolded for a period of time, then allowed to once again use his residual vision for travel purposes, and then blindfolded again. This sequence was repeated until the instructor and trainee felt that he was making maximum use of the existent non-visual cues for mobility purposes. The type of occludor used was the sleep shade type, which may be obtained from the Sleep Shade Company at $1.50 each.

Some use was made of the Braille Compass sold by the American Foundation for the Blind. However, a compass is not always reliable since it can be effected by the presence of large quantities of certain types of metals. All trainees received instructions in the use of the compass.

F. Client Capacity

In the original plan the instructor was to provide one hour of orientation and mobility training to each trainee on a daily basis, and he was to devote one hour a day to record training notes and to write monthly progress reports. This schedule was adhered to throughout the operation of the project. The schedule left seven hours daily for training. Since all training was conducted on a one to one trainee-instructor ratio, no more than seven persons were in training at any given time. However, during time intervals when special services were being rendered the number did increase.

G. Public Education

The project director and the project staff felt that an integral part of any phase of work with the blind should be that of educating the public to the capabilities of blind people, therefore, the project, its purposes, and goals were publicized whenever opportunities presented themselves. The project was described in the Arkansas Enterprises for the Blind monthly publication, "THE NEW LIFE", which has a circulation of 7,500. This publication is distributed to the Lions Clubs of Arkansas, the officers of Lions International, and to most of the professional organizations serving the handicapped throughout the nation as well as to all former trainees of the Center. Periodic reports were also made on the progress being achieved through this publication medium. An announcement of the grant for the project appeared in both of the major daily papers of the state.

Mention was made of the project in the Center's informational film entitled "PATHWAYS TO A NEW LIFE" which has been shown in many states and in New Zealand. The Superintendent of the Arkansas School for the Blind gave a report of the project at the 1966 conference of the American Association of Instructors of the Blind; and information concerning the project was also presented at the 1965 conference of the Council for Exceptional Children which met in Salem, Oregon.

The Director of the project made reports to the 1964, '65, and '66 annual conferences of Arkansas Lions clubs concerning the progress made, as well as many informal reports to interested professional groups throughout the nation and in several foreign countries.

The first instructor gave a report to the graduate mobility instructors in a conference held at Washington, D. C., in April of 1964. The second project instructor reported on the project to several social work classes at Little Rock University. He also attended the Region Seven N.R.A. conference in Oklahoma City in March 1965 and the annual 1965 conference of the American Association of Workers for the Blind where he held informal discussions with interested individuals. It is also well to mention that he was a charter member of the Mobility Interest Group of the A.A.W.B. and assisted in the formation of this group. The Center's field representative also discussed the project at many civic clubs and professional organizations throughout the United States. One of the secondary benefits of the project was that it served as another medium of exchanging information with professional workers and educated the public as to the capabilities of blind people.

CHAPTER III

METHODOLOGY

A. Analysis of Trainees

The total number of trainees served by the project was 67. Forty-eight persons completed the training program. The number of males was 35 and there were 32 females. Twenty-five of the individuals who entered the training program were referred by the Arkansas School for the Blind and 42 were referred by the Arkansas Rehabilitation Services for the Blind. The average age of the trainees was 23 years and 6 months and there was a range of ages from seven to seventy-two years.

General Medical Analysis

All of the trainees, prior to their acceptance for training, had a general examinationeither by their family physician or by the physicians used by the Arkansas Rehabilitation Service, the Arkansas School for the Blind, or by Arkansas Enterprises for the Blind. All of those accepted were pronounced physically fit to participate in a training program by a physician. Eleven of the group had disabilities in addition to their blindness. Disabilities were as follows: Diabetes--three, high blood pressure--2, partial use of limbs--2, hand amputee--1, and epilepsy--1. An audiometric examination was required of all of the applicants and this examination was secured from the Audiology Center at the Arkansas School for the Deaf.

All applicants were required to have a recent ophthalmological examination either from a doctor of their choice or one of those serving the rehabilitation agencies. Of the total of 67, fifty-four were totally blind and of them, thirty-four were congenitally totally blind, leaving 20 adventiously totally blind trainees. There were 13 partially sighted persons served during the project. Six of these were congenitally blind and seven were adventiously blind.

Psychological Analysis

Efforts were made to secure psychological evaluations on all individuals served by the project. However, the agency was not able, for several reasons, to secure this information on all the trainees. Such information was available on forty-eight of the sixty-seven. The average I.Q. score was 114 with a range from 77 to 139. Three of the total group were diagnosed as being emotionally disturbed.

Social and Educational

All of the group were from lower and middle income families. The average educational level of the group was the tenth grade with a range of one year to a bachelors degree. From a standpoint of marital status, fifty-one of the clients were single and sixteen were married.

B. Data Collection and Analysis

The Initial Interview

This interview, conducted by the instructor shortly after the trainee was referred for the program served as a very important tool in the collection of pertinent data. It also offered an opportunity for the instructor to answer any questions that the trainee might have concerning the training program. This interview also served to allay many anxieties which the perspective applicant had concerning their future training. It was also used as a means of developing rapport between the instructor and the trainee. The agency has worked on the principle that rapport between the instructor and the trainee is an important factor involved in the training process because of the impact upon effective communications. The interview was always conducted in the client's home, if he were a rehabilitation service referral, or at the School for the Blind if he was referred by that agency. During the course of the interview the instructor frequently had the opportunity to initiate the preliminary evaluation of the client's mobility skills and potential for development in that area. This was accomplished by observation and by direct questioning of the client.

The initial Evaluation

The initial mobility evaluation was started during the first training session with the trainee at which time the instructor recorded pertinent data on a standard evaluation form. This recorded information was used rather extensively on a comparative basis to assess the development of skills throughout the period of training. Much of the information could be gained by directly questioning the individual, especially regarding such things as the extent of previous training, the trainee's feelings regarding training and independent mobility, and his previous experiences with attempts to move independently in his environment. The instructor also observed him move about in a familiar environment looking specifically at the methods he was using to protect himself, gain information, and remain oriented. Evaluation was also done during the time the trainee was being instructed in basic skills. During this time the instructor had an excellent vantage point from which to assess the individual's attentiveness, motivation, concentration, and anxieties concerning moving independently. Generally the initial evaluation process could be completed within a period of two weeks.

Individual performance during training

As has been indicated earlier, the instructor kept daily notes regarding the clients progress and performance during the instruction period. Specific mention was made of problem areas regarding skill development. These were extensively reviewed weekly and were discussed with the trainee. The instructor could then isolate specific problems and predict similar areas in which the person would require

added emphasis in future lessons. Specific instances in which he was not performing well could also be noted by this means.

Trainee's Attitude

The referral sources were asked to make some mention of the trainee's attitude toward the training program when he was originally referred to the project. The instructor also had an opportunity to make a realistic assessment of these attitudes during the initial interview with the trainee. The instructor also noted the trainee's attitude toward training during the duration of the period and such information was appropriately recorded in the daily training notes. The follow-up que$ionnaire was also designed to reflect the individual's attitudes after the training had been completed and he had gained some experiences with independent nobility. During the course of training attention was paid to expressions of resentment such as habitual tardiness or absenteeism from lessons or other expressions of resentment or hostility made by the trainee.

Thirty-three of the 67 participants in the program were rated as being highly motivated, 26 of average motivation, and 8 as having rather poor motivation.

The follow-up interview

The follow-up interview offered an excellent opportunity to determine whether or not the trainee had put to use the newly acquired skills, to assess his level of confidence after independent mobility experiences, to compare his performance prior to training with that after training, and to make an overall assessment of the training program. These interviews were conducted by project personnel other than the instructor and usually from six months to one year after the termination of the training program. It was not possible to obtain a follow-up on all the participants but information was obtained from 40 of the 67 participants.

C. THE TRAINING METHODS

The Basic Skills

Much emphasis was placed upon the development of basic skills. It was felt that a sound development and a high level of proficiency in this area would facilitate the development of more advanced skills in the units to follow. It was also believed that there would be times when the trainee, regardless of his level of proficiency, would have to revert to the basic skills in order to move safely. This is particularly true when the blind person enters unfamiliar areas.

The skills covered during this phase of training were as follows:
(1) The use of a sighted guide. Care was taken to use this particular terminology rather than "the following technique" because it is more

indicative of the independence that was the goal of the training. The blind individual was taught to use the specific method of taking the sighted guide's arm, grasping it above the elbow with the fingers touching the inner side of the arm and the thumb on the outside. The blind person was also taught to remain one half step behind the guide so as to have time to react to the information that he gained. This was modified to one full step when entering doorways, narrow passages, and on stairways. It was also pointed out to the trainee that he should work out a system of signals between himself and those guides he might be using regularly which would facilitate the guiding situation. Such things as proper seating and some sensory training was also incorporated into these lessons. *(Basic Skills as referred to here is also synonomous with what has been referred to as precane skills in some situations.)

The trainee was also instructed as to modifications of these techniques when it was apparent that such modifications would serve him better. However, care was taken to point out that, for the majority of people, this was the most reliable method known.
(2) The hand and forearm across the body--This consisted of offering the trainee a means of protecting his upper body when traveling in familiar areas. He was instructed to use either arm, keeping the lower arm flexed at an obtuse angle in front of the body.
(3) Trailing walls--This was offered as a method of orientation, of maintaining a straight line of travel, and of locating specific objectives. The trainee extended either arm in front of his body, flexing the fingers in such a way as to allow the backs of the last two to trail the wall lightly. Some sensory training was also incorporated into this phase of training.
(4) Alignment, direction taking, and squaring off--These were instructed as methods of obtaining a straight line of travel from one object in the environment to another. The objects used for the purpose were doorways, furniture lines when projected into space, and sound cues. This also offered the trainee some valuable information concerning the proper way to orient himself to unfamiliar areas in the future.
(5) Retrieving dropped articles--This was demonstrated as a workable method of finding articles dropped when one was alone. It consisted of turning toward the direction of the sound immediately, moving to it, kneeling with the hand in front of the head for protection, and exploring with the hand in a circular motion until the object was encountered.
(6) Social Graces.. This included: (a) Opening doors for female guides--The trainee was instructed to reach for the door with his free arm, open it and to allow the guide to preceed him through the door. (b) Table and Eating techniques--This area was generally left to instructors of home economica or activities in daily living. However in some situations where this resource was not available, the instructor covered some of the basic points, thereby facilitating the trainee's solution to some very real problems involved in this type of situation.

Although no time limit was placed upon the completion of this specific phase of training, it was generally completed by the end of the third week of training.

The Introduction of the Cane

The trainee was introduced to several types of canes and the relative merits of each were explained. Great care was taken to instill an understanding of the proper function of the cane and the desirable features that it should possess. The trainee was then issued a cane measured for him. The method of measuring was to allow the cane to reach the base of the sternum while the trainee stood erect with his arms at his sides. In almost all cases, an adjustment in cane length had to be made once the trainee gained confidence and began taking longer strides. Usually, this adjustment called for a longer cane because the individual was overstepping the point of contact with the cane and surface and this resulted in his stepping off curbs or bumping into obstacles.

The method of cane usage taught was the "Touch Method", commonly referred to in some circles as the "Hoover Method" or the "Rhythm Method" which basically consists of extending and centering the arm and hand in front of the body with the elbow locked into position. The cane is grasped by the handle with the fingers wrapped around it with the thumb over the top of the handle. The cane is swung from left to right by the motion of the wrist. As the user walks, the cane describes an arc approximately one inch wider than the shoulders and touches in front of the foot that is to move forward, thus allowing the user always to walk into an explored area.

The initial instructions in cane usage were given indoors whenever possible. It was felt that the additional noise of the out-of-doors would produce some anxiety which would interfere with the trainee's concentration on the basic cane skills. However in some cases, as in isolated residential areas, it was not possible to do this; therefore smooth, wide sidewalks in quiet areas were selected for this phase of training. Much time was spent in concentration on the correct arm and hand position, the arc of proper width, the development of a light touch with the cane, and the recognition of objects. These basic skills were regarded as essential to future performance; and care was taken to assure their proper development.

The trainee was shown the diagonal technique of cane usage for familiar areas. In this technique the cane is held diagonally across the body when walking and is not swung from one side to another. It offers some protection from objects in one's path but does not explore the surface being walked upon.

Instruction was also given on methods of exploring with the cane to locate door knobs, dropped articles, and other small objects.

After the trainee had developed some skill with the cane he was moved to rather quiet sidewalks and allowed to practice the skills in areas relatively unfamiliar to him where there were few hazards.

The Residential Phase

From a simple area the trainee was introduced to travel in the residential sections. Initially, he was oriented to the beginning route where he was shown the pertinent features and landmarks along the way and oriented to the location of the objectives. He was instructed in the techniques involved in independent street crossings which included: proper alignment and direction-taking techniques for straight line crossings, aligning oneself from the curb or grassline; listening for traffic lulls; and crossing when the street was clear.

After this orientation and instruction the trainee was allowed to proceed to the objective and his mistakes were corrected. When several trips had been made with the instructor, he was asked to make the same trip alone. (The philosophy of the Mobility Department of the AEB has been that the trainee should have a number of these independent assignments during his period of training;otherwise, he may never have the opportunity until his training is complete. This tests his newly acquired skills in an independent situation.) These assignments, whenever possible, were those which had some practical meaning to the trainee such as: the bus stop, the barber shop, a neighbor's house, or the grocery store. As he gained proficiency in the skills involved, the routes were made longer and more complex, involving such problems as irregular intersections, dead end streets, areas with no sidewalks requiring shoreline-type travel, and areas of very rough terrain.

Sequential planning was strictly adhered to throughout every phase of the training program in order to enable the trainee to develop his skills in the proper order. By the time he had completed the lessons in this phase of the program he had gained some experience in areas that might be considered semi-business in nature and had gained some confidence in situations with moderate traffic.

Rural Mobility

This phase of mobility training followed the residential phase and was conducted in outlying areas of the city such as city parks. It consisted of the use of various types of shorelines such as curbs, ditches, the edges of pavement, and grasslines. It was important here to point out that traveling in a rural area and locating an objective would be virtually impossible without some familiarity with the environment.

Metropolitan Mobility

The first step in this phase of the training program was to orient the trainee to the city busses. Whenever possible the instructor and trainee went to the bus garage and used an empty bus for familiarization. Such orientation included methods of catching the correct bus, paying the fare, informing the driver as to one's destination, and getting acquainted with the seating arrangement of the busses. Once the individual had mastered the methods involved in the use of public transportation facilities, he was oriented to the beginning route in the downtown area and to the objectives along the route. He was also instructed in the cane techniques applicable in this particular area. The route was planned so that its origin was several blocks away from the central business district, thus allowing the trainee to gradually work his way into the more congested areas. The next step was independent street crossings at the busier streets and methods of straight and safe crossing, utilizing auditory cues of the traffic and other pedestrians. Once the trainee had mastered the skills appropriate to this particular route, he was allowed to attempt it alone. This was referred to as his "solo trip", representing his first step in independent mobility in a busy area. After the solo trip, the initial route was extended to include additional problems such as parking lot, service station entrances and moving about large buildings. Here again, the sequence of familiarization, instruction, and independent assignment was followed. This particular route was rectangular in pattern; therefore, the next step was to reverse the pattern for traveling the route as a test of the orientation development of the trainee. By this time the trainee was beginning to encounter a number of very heavily traveled boulevards or highways where individual street crossings were necessary. In unfamiliar situations he was advised to seek sighted assistance at crossings.

Locating specific objectives by utilizing information pertaining to the city numbering system and street pattern was the next area of instruction. The trainee was given an explanation of the base streets (those that were the dividing line for the east-west and north-south streets), how the blocks were numbered, and on which side of the street were the odd and even numbers. Such specific features as the direction of the alleys and their relationship to the number of the doorways were also explained. The trainees were then given a Braille list of objectives to copy and route for economy in walking, and instructed to locate them by entering the building and talking to a salesperson or clerk to determine if he had reached the desired objective. The instructor accompanied the trainee on the initial list and assisted him with route planning and more specific methods involved in locating these objectives. These lists were arranged so that the trainee moved from the more simple objectives to the more complex ones which required transferring busses, riding to unfamiliar areas of the city, orienting himself, and then proceeding to locate objectives. Some of these assignments were independent; and in others the instructor was nearby, evaluating the trainee's progress and making corrections when needed. As a method of breaking unwitting dependency, but affording

safety, the trainee did not have advanced knowledge of the instructor's presence.

This unit of training consisted of 23 separate assignments. Scheduling was a problem, since it required at least 2 hours to complete the assignments. Therefore, the lessons usually consisted of a 2 hour training session every other day rather than the one hour daily schedule which had been followed to this point.

Final Testing

The last phase of the program consisted of the final testing. Here, the trainee was given a list of objectives to locate in an adjacent city with which he was not familiar. He made his own arrangements for transportation, taking the public transportation facilities when they were available. (The routes were designed so that in almost every situation this was an inter-city bus system.) Once the destination was reached by bus, he proceeded to ask for information necessary to locate the objectives. The city of North Little Rock was used for the test since its street pattern and numbering system is the reverse of Little Rock's where the trainee has previously worked. Thus, this test provided an excellent opportunity for the instructor to observe first hand the trainee's ability to function in an unfamiliar situation. The instructor evaluated the trainee by how well he could orient himself, locate objectives, operate under pressure, elicit information from persons in the environment such as other pedestrians or shop keepers, and put such information to use.

Special Services

From time to time certain special services were made available to trainees, when such services were within the scope of the purpose of the project. The first of these was initiated at the request of the Arkansas School for the Blind and the Arkansas Rehabilitation Services for the Blind. The two agencies had for some time been aware of the fact that a number of their clients had experienced difficulties in becoming oriented to their college campus. They requested that the project instructor work with these clients on their respective campuses. This service was provided for seven clients. The instructor requested that the student write to his college and secure a map of the campus. Upon receipt of the map, the instructor transcribed it, using a raised line drawing kit. He and the student then studied the map in advance of a trip to the campus. Upon arriving at the campus they began the physical orientation, originating at the trainee's assigned room and gradually proceeding from that point to the entire campus. Usually, a maximum time of two days was allotted for this; however in a number of cases, the orientation was accomplished in less time. Such orientation was made available only to those students attending Arkansas colleges since limited funds prevented extensive travel. A similar service was rendered to trainees who attended a comprehensive general rehabilitation

center after completing pre-vocational training there.

Prior to the 1965 school year, the Arkansas School for the Blind operated a segregated facility for Negroes some distance from the main campus. At the beginning of the 1965 school year these two institutions were combined and this presented the problem of orienting twenty-two Negro students to a larger campus. The Superintendent and the Principal of the School contacted the instructor prior to the beginning of the school year and plans were made to orient these new students.

The first step was a workshop for houseparents and in-residence teachers. This workshop was so planned and structured to acquaint these individuals with some of the things they could do to facilitate the initial orientation of the student and to reinforce the work of the instructor. A total of four workshops was conducted for the houseparents.. A workshop was conducted for the houseparents and staff of the School's unit for the retarded since the instructor worked with one student from that unit. A form was devised for the houseparents and homeroom teachers to indicate those students who were in need of immediate instruction in orientation and mobility. The results of this survey enabled the instructor to compile a list and set priorities according to individual needs.

The first six weeks of the 1965 school year was devoted to orienting these new students. Before this could be accomplished, they had to be instructed in the basic skills previously outlined. Primarily, the orientation followed the same sequence described for the basic skills phase of the entire training program. The eldest of these new students remained in the program for complete training after orientation. New students enrolling in the school from time to time were instructed in the same manner.

Other special services included brief workshops for home teachers and counselors of the blind. These workshops were designed to define the role of orientation and mobility training in the total rehabilitation process. These individuals were given information as to how they could reinforce the work of the orientor. They were also encouraged to work with the trainee's family by explaining how he would be able to put his newly acquired skills to use. The content of these workshops usually included lectures, demonstrations, and some work with the blindfold. One factor stressed was the importance of discontinuing the practice of giving canes to those persons who had not received training in its proper use.

D. A DESCRIPTION OF THE MEASURING DEVICES

Two measuring devices were used and are described as follows:

The initial evaluation form was devised to indicate (1) previous training, (2) amount of previous training, (3) where, how long, and the

instructor, (4) an assessment of the trainee's abilities in the areas of basic skills, residential mobility, and metropolitan mobility, (5) an assessment of the degree of fear that the trainee had concerning independent mobility, (6) an assessment of the level of motivation of the trainee and (7) the determination of the amount of resistance to the cane. Such information as the age, sex, grade level, physical condition, and Intelligence Quotience were not shown on this form; however, they were appropriately recorded on reports received from the counselor, psychologist, doctor, and/or the school officials.

The follow-up questionnaire was devised to reveal this information: (1) did the trainee feel he had benefitted from the training? (2) did he feel the training had affected his self-confidence? (3) How was this training different from previous training? (4) what did he feel he had accomplished in the previous training? (5) Had he traveled independently prior to training (6) prior to training, how had he gotten to and from work or school? (7) did he shop, use the city buses or make out of town trips alone prior to training? (8) was his period of training long enough? (9) how much more training would he have needed? (10) in what areas did he feel he would have needed additional training? (11) was Mr._____a good instructor? Why? (12) how could the training have been improved? (13) did the training affect his future planning? (14) upon completion of training did he shop, go to work, and ride buses independently?

CHAPTER IV

RESULTS

A. SKILL DEVELOPMENT OF TRAINEES

Prior to Training: The results of the evaluation of the 67 trainees prior to training are as follows:

1. Thirty-four had received some training prior to their enrollment in the project. The training had ranged from two lessons to a maximum of fifty lessons with an average of twenty-two lessons.
2. Of the total group, forty-three were rated as poor travelers, twenty-three were rated as average travelers, and one was rated as a good traveler prior to enrollment in the mobility and orientation training.
3. Thirty-three of the sixty-seven were rated as being highly motivated, twenty-six as being of average motivation, and eight as having poor motivation.
4. Thirty indicated that the idea of traveling alone was quite fearful to them.
5. Twenty-three of the group resisted the use of the white cane, fearing that people would associate it with begging.
6. Fourteen of the group reported that they had traveled independently prior to receiving mobility training. Ten of these fourteen indicated they did their own shopping and ran their own errands. Eleven indicated that they had used city buses independently prior to training.

(Note: See Analysis of Trainee section, page 13 for a breakdown by referral sources, age, sex, educational level, marital status, and Intelligence Quotient.)

Evaluation after Training

It was not possible to complete the follow-up interview on all the trainees who participated in the course since some left the state or had completed the training and moved to a remote area of the state. Follow-up interviews were completed on forty of the forty-eight persons who completed the training course. Nineteen of the trainees did not complete the total program due to the following reasons:

1. Nine of the trainees either entered or returned to college.
2. One married.
3. Four either dropped out of the program at the Arkansas School for the Blind of moved to an area outside of Pulaski County where they could not continue to receive services.
4. Two secured employment and dropped out of the mobility training program.
5. Three of the trainees left the program due to illness.

It may be noted from the above factors that the largest number of the trainees left the program either to return to or enter college. This was due to the fact that many of the Rehabilitation Services for the Blind referrals were made during the summer months on individuals who were

either in college or who were planning to enter college. Many of these students were entering or attending colleges outside of the Pulaski County area and did not have time to complete the training program during the summer months. Most of them, however, were able to develop a certain amount of skill which tended to serve them well during the ensuing school year.

The forty interviews revealed the following:

1. Sixteen felt they could have benefitted from additional training.
2. Thirty-nine felt they definitely received benefit from the training made available to them.
3. Thirty-nine stated they were traveling more independently as a result of the training.
4. Thirty reported they were doing their own shopping and running their own errands.
5. Twenty-one felt their training could have been improved. The majority of these felt that additional time in training would be the major way for improvement.
6. Twenty-seven of the group reported that, after the training, they were able to plan more comprehensively for the future.
7. All forty interviewed, regarded their instructors as being good ones.

The measuring of self-confidence after training was difficult since there were no testing devices available. However, some conclusions could be made by observing the mobility performance of the individual and by evaluating any attitudinal changes. This evaluation was a team endeavor of the instructor and referral source and both felt that all the trainees had demonstrated in varying degrees an improvement in self-confidence.

Trainee achievements after Program completion

The follow-up interviews revealed that twenty-six of the sixty-seven persons who entered the training program enrolled in or returned to college. Eight secured employment and four accepted more comprehensive rehabilitation services in pre-vocational areas. Nineteen of the trainees continued their educational program at the Arkansas School for the Blind. Two married and became housewives. Four of the individuals continued working and six maintained their same status, either that of a housewife or unemployed.

B. THE TRAINING PROCEDURES

The Frequency of Instruction

As was indicated earlier, it was the opinion of the instructors, the project director, and the referral sources that effective mobility could best be accomplished through daily lessons on a one-to-one trainee-

instructor basis. This procedure was followed throughout the project except near the end of the individual's training when the advanced assignments required more than one hour for completion. At that time the lessons were conducted every other day. It would appear from the results of the project that this programming of lessons was a most effective one.

The Length of the Lessons

During the earlier phases of the training program, it was the opinion of the instructors that lessons of one hour were too lengthy. The trainees often seemed to become tired and apprehensive during that period of time. The resourceful instructor could use rest intervals to discuss some of the problems the individual had encountered. As skill development progressed, the trainees developed more physical stamina and self-confidence, thereby alleviating the problem indicated above. It was felt that the two-hour lesson was too long for the trainees as their performances definitely grew poorer during the last 30 minutes; however, it seemed that such an arrangement was the only means of achieving the goal of advanced training.

The number of lessons and the length of the training period

The initial instructor requested a training period of 3 months, consisting of 60 lessons, which was agreed to by the project director and the referral sources. The second project instructor was of the opinion that such an arrangement did not allow for the individual differences in the physical and mental abilities of the students and that some referrals would not require this much time while others would require a great deal more. Therefore, he requested that trainees be accepted for whatever length of time necessary for them to develop to a level of maximun proficiency. This request was readily accepted by all of the personnel and became an operational guideline for the remainder of the project.

The average length of the training time for all trainees was three months and three days. The average number of instructional hours per trainee was 63. There was a range of one month (20 instructional hours) to seven months (140 instructional hours). The average number of instructional hours and length of training time for those completing training (N-48) was sixty-six hours or three months and six days. A more comprehensive breakdown of these factors indicated that the average for the partially seeing who completed the course was fifty-nine hours, or two months and twenty-nine days, while the average for the totally blind was seventy-three hours, or three months and thirteen days.

The average number of instructional hours and length of training time for the congenitally blind was seventy-two hours, or three months and twelve days, while the average for the adventitiously blind was sixty-five hours, or three months and five days.

The average time for the females completing the program was eighty-one hours, or four months and one day, while the average time for males was fifty-eight hours, or two months and eighteen days. An analysis of training time and the number of lessons by I.Q. range reveals the following:

130 and above------ 72.5 hours, or 3 months and 12 days
120--129---------- 61.4 hours, or 3 months and one day
110--119---------- 87.7 hours, or 4 months and 7 days
90--109----------- 78.7 hours, or 3 months and 18 days
80--89 ----------106 hours, or 5 months and 6 days

It might be well to indicate that the extremes of the I.Q. ranges were limited in number, as the largest number fell between a 90 to 120 range with an average I.Q. of 114. (Wechsler Scale)

Sequence of Instruction

It was the opinion of all personnel involved in the project that the sequence of instruction, independent assignments, and review was a workable one. The fact that each trainee indicated by his performance that he had made progress is sufficient to justify this procedure.

C. MOBILITY TECHNIQUES

Basic Skills

This phase of the mobility training program was the one area in which all 67 referrals participated. Therefore, it offers more comprehensive data than the other phases. It was found that fifty-two of the persons in the training program were described as poor in this area prior to their training. After completion of the program all forty-eight were given a rating of "good". Thirty-five of the forty follow-up interviews indicated that the basic skills techniques contributed to their success as independent travelers in their communities and that there were many instances in which it was necessary for the person to revert to the use of these basic skills, particularly in unfamiliar environments.

It was noted by the project staff that some of the basic skill techniques taught in this phase of the training program caused strong resistance on the part of some of the students from the Arkansas School for the Blind. Twenty of the twenty-five persons from that agency indicated a resistance to the use of the arm-and-hand-across-the-chest technique prior to entering the program. Fifteen trainees did not like the method of using a sighted guide and twenty-two of the referrals saw no advantage in trailing walls. As the trainee progressed through the program it was noted that his attitudes changed and he began seeing the usefulness of these techniques. Sixteen of the students from the School were using the proper method of following a guide, and seventeen were trailing walls at the termination of their training.

The Cane Skills

Sixty-three of the sixty-seven referrals received rather extensive instruction in this phase of the training program. Thirty-four had previously received training in the use of the cane and twenty-six had received specific instruction in the touch method of cane usage. There was no indication, however, that previous instruction had resulted in the ultimate development of adequate cane skills. Only one of the group had strong negative feelings concerning the method being taught. In fact, fifty-five of the sixty-three who received instructions in the touch method reported that they were very satisfied with the protection which it offered and the information that they were able to gain through its use.

Thirty of the sixty-three individuals who received instructions in the touch method of cane travel developed excellent techniques, twenty-three were evaluated as having adequate techniques, and ten had rather poor techniques. Two of the ten were physically handicapped in such a manner as to make the development of graceful cane techniques impossible.

It would appear that the development of an arc of the proper width was the most difficult task involved. Thirty-five of the sixty three trainees had difficulty with this particular factor.

The next most difficult factor was maintaining the proper rhythm of the cane and the feet, or what is more commonly referred to as "Staying in step with the cane". Twenty-eight had difficulty with this task and five could never maintain the rhythm properly. It is interesting to note, however, that these five could travel with a surprising degree of safety, indicating that the individual can adjust to modifications in the basic technique when physical implications necessitate them.

The diagonal technique for use in familiar areas was highly popular with the trainees. This also proved to be one of the skills that was more easily developed. Fifty-six trainees could use this method effectively when the environment allowed it.

The stair technique, especially that of descending stairs, required frequent modification. The basic method of descending without touching every step with the cane did not always offer the security which the elderly or those individuals with poor balance desired; therefore, a modified version which allowed for cane contact with each riser was used.

Residential Skills

Sixty of the sixty-seven trainees received this instruction. The instructor familiarized himself with the trainees' home areas in the case of Rehabilitation referrals and with the school area for the School referrals and improvised routes which appeared to be the ones the trainee would have occasion to use. Fifty trainees became very proficient in this phase

of the training program. The forty persons who were contacted on the follow-up interviews reported they were traveling in residential sections. The most difficult skill encountered by them was independent street crossings. Thirty-five of the sixty trainees encountered problems in this area and required prolonged instructions to attain a degree of proficiency. Generally, veering was the greatest difficulty. The area of visualization and concept formation was an extremely important factor relating to success in this area. Usually, this problem was more severe with the congenitally blind than with the adventitiously blind. The instructor frequently made use of Braille maps and raised line drawings in an effort to stimulate development. Much effort was made to provide as many tactual experiences as possible for those having this difficulty since it was felt that actual experience was the most important factor in the development of accurate concepts. However, at least 25 of the trainees were unable to visualize an area well enough for them to travel it without encountering some problems. This suggests that the area of concept formation is one where much research is needed.

It is significant to note that twenty-six of the sixty individuals felt that residential travel was as difficult as, if not more difficult than, the metropolitan phase of the program. When questioned further, the reason given most often was that they were reassured by the presence of larger numbers of pedestrians in the downtown area whereas this was not always true in the residential areas. Thirty-five of the forty follow-up interviews revealed that their contacts with the community were more meaningful since they were able to move about it with a degree of independence.

Metropolitan Skills

Fifty-six trainees received some instruction in metropolitan skills and forty-eight completed the training program in this area. Instruction was more intensive in this area since it involved the most danger to the individual. Again, in this phase, the most difficulties were encountered in learning to cross streets independently. Thirty-two of the forty-eight had difficulty crossing streets independently and required concentration and prolonged instructions. Four of this group did not attain sufficient skill for them to cross independently in all situations. Generally, this was due to other physical impairments such as hearing difficulties or lameness. Veering was initially a problem for all trainees, however, with remedial training, this problem was alleviated. This was most evident as the individual began to adjust to the additional noise and movement.

The problem of concept formation and visualization also proved to be an area of major emphasis. It was interesting to note that it was easier to develop accurate concepts in the downtown section than in the residential areas. This was primarily due to the fact that the basic grid pattern of the streets was standard in downtown Little Rock, but this is not always true in the residential section of the city. The use

of public transportation facilities was not a problem for the majority of the trainees. In fact, the only ones who experienced difficulties were those who were somewhat shy in their contacts with the sighted public and were inhibited in talking with the bus driver. This problem was alleviated to some extent by requiring the trainees to locate objectives such as business places, and to talk with the sales people. Initially, there was resistance to this suggestion, but it is safe to say that the majority indicated these contacts had proven interesting and beneficial.

The phase of locating specific objectives (by utilizing information pertaining to the city numbering system and street pattern) was used in lieu of drop-offs. It was felt by the mobility department of the Center that drop-offs were atypical, since it would be highly unlikely that the blind individual would ever be in a situation where he would have no previous knowledge of the environment. Forty-two of the forty-eight who participated became quite proficient in locating objectives from available information. Thirty-nine of the forty follow-up interviews revealed that the individuals were traveling more efficiently in the metropolitan area; and all forty indicated that they had made trips to such areas since training.

Rural Mobility

Training in rural situations was made available to certain trainees upon request, but only six felt a need for such training. This generally was provided in the large city parks or in the remote residential areas and consisted largely of stressing the importance of the use of various types of shorelines and landmarks. Generally, those requesting this training were those who visited relatives living in such areas, or who pursued some form of outdoor hobby. All indicated that this instruction was beneficial to them.

D. MOBILITY AIDS

The Cane

As previously indicated, all the trainees used the Arkansas Traveler cane described earlier. They were informed of the other types of canes available and were allowed to use them upon request. The entire group was satisfied with the cane during the training and only one of the forty answering the follow-up questionnaire had changed to another type cane. Some problems were encountered with this cane, the most frequent being the need for tip replacement. Fifteen of the sixty canes issued required a new tip mechanism before the completion of the training course.

It was most helpful that these canes were supplied in varying lengths within a range indicated earlier and that a large supply was available at the rehabilitation center. This prevented the instructor from losing valuable time preparing and assembling a cane of the required length.

The Sight Occluders

There were thirteen partially sighted persons who received mobility training. Seven used the sight occluder to better facilitate their use of other sensory information. The occluder was never used to prepare an individual with poor visual prognosis for the time when he would eventually become totally blind. It was felt that all seven received benefit from the selective use of the occluder; and, as a result, auditory cues were more meaningful to them. Only three of the group resisted the use of the occluders and were not required to wear them.

The Braille Maps

The Braille maps used were made from plywood with grooves representing streets and sidewalks and blocks of wood representing the standard city blocks. The common raised-line type was also used to some extent. In almost all cases these were used by the congenitally blind as a means of gaining some concept of the area. They were used by all the totally, congenitally blind. (N-28) Their performance and statements indicated that the maps were of value, although there were no objective means for evaluating this. An effort was made to discourage their use later in the training program to prevent their becoming a crutch which the individual would not have available in his home environment. Some of the adventitiously blind made use of the maps in a similar manner; however, their use was extremely limited.

The Braille Compass

This instrument was introduced to all the trainees. However, since the compass is subject to being affected by metal in the environment and was difficult for most to operate, the results of its use were not significant.

E. DEMONSTRATION RESULTS

Plans of the Arkansas School for the Blind

After the three years of mobility instruction were made available to this institution through the mobility and orientation research project, the superintendent, faculty, and board of directors have made the decision to employ a full-time mobility instructor. Since this was one of the purposes of the demonstration, it seems that this objective was well attained.

Plans of the Arkansas Rehabilitation Service for the Blind

As a result of the project some tentative joint planning has been done by this agency and the school. Since they operate only nine months of the year some thought has been given to arranging field work during the summer recess for the mobility instructor, when one is employed. Such field work would consist of orienting persons to place of employment and in some instances orienting college students to the campus. In some instances persons already employed, but who either change locations

or need additional skill, but who cannot enroll in a full time pre-vocational mobility course at a facility, could be served. Such cooperative use of an instructor may meet the occasional need of the rehabilitation agency when it would be uneconomical to employ a mobility instructor on a full time basis.

Influence on Public Opinion and Attitudes:

Since neighborhood mobility instruction began at the trainee's home many persons observed such training for the first time. Many of them at first felt compelled to offer solace to the trainee. As training progressed these behavior patterns changed, although some interpretation of the rehabilitation effort was necessary on the part of both the instructor and the trainee. These results were observed, but the results of the other efforts of public education directly resulting cannot be stated.

CHAPTER V

IMPLICATIONS

A. INSTRUCTIONAL TECHNIQUES AND PROCEDURES

The Frequency of Instruction

It appears that the most significant progress was made during the time the individual received daily instruction. It was noted that, when frequency of instruction was changed to every other day, the progress of the trainee slowed considerably. The premise that daily instruction facilitates more significant progress is generally accepted today by the majority of the existing mobility and orientation programs.

The Length of the Lessons

Initially, the one-hour lesson proved to be somewhat lengthy; however, as the training program progressed, this amount of time was required to complete a lesson. It was found that early in the training program the individual tired easily and the fatigue factor should be considered when planning lessons. However, during the greater part of the training program, the one-hour lesson is desirable.

The length of the Training Period

It was initially thought, by the first instructor, that the training program could be completed in a period of three months without exception. This proved to be unsatisfactory and the program was altered to provide the trainee with the amount of time necessary for him to reach his level of maximum proficiency. As was indicated earlier, some individuals were able to reach this level in less than three months while one individual required seven months.

The Trainee Instructor Ratio

The trainee-instructor ratio was kept on a one-to-one basis throughout the duration of the research project. It was apparent that such an arrangement offered several advantages:

1. The instructor could establish and maintain a more effective rapport with the trainee,
2. The instructor could give more effective instruction when his attention was focused upon one individual,
3. The trainee was more at ease when he realized that the instructor was devoting all attention to him and his particular problems,
4. The trainee did not feel the need to compete with others in training, and
5. It provided for the effective implementation of sequential planning of lessons.

Although no experimentation was done on other than a one-to-one ratio, it appears that this is a highly effective method of teaching mobility and orientation skills.

Independent Assignments

All trainees who completed the program received at least one independent assignment during each phase of the training program. During these assignments they were required to function without the immediate supervisor or the instructor. These assignments were scheduled when the instructor and the trainee felt that the individual was sufficiently skilled to master the problems involved in the assignment. All trainees indicated that this phase of the program did much to bolster confidence in their ability to travel independently. They felt this was essential during the course of their training program since it provided them with an opportunity to test their newly acquired skills. This was followed by an evaluation session with the instructor to discuss any problems that might have occurred.

Review

Reviews were frequent throughout the duration of the training, usually on a weekly basis. Many times they consisted of repetition of a previous assignment or a new assignment designed to call into use all the skills learned to date. It was observed that the trainees looked forward to these reviews. They served to reinforce the skills that had been learned and for practice of those skills with which the trainee might have had difficulty.

Final Testing

This was designed to provide a rather dramatic climax to the entire training program. The trainees discussed this matter with the instructor and, generally, looked forward to it as tangible evidence of the achievements they had made. This final testing seemed to be the highlight of the training program. Perhaps this was due to the fact that the final tests were conducted in a new or unfamiliar environment. Each person was graded on the way he performed. All those participating in this trip completed it with only the ordinary problems one would be expected to encounter when traveling in unfamiliar places. The instructor felt that such a trip offered the opportunity to accurately evaluate the performance of the trainee and to analyze the progress he had made during the course of training.

In recognition of this achievement the trainee was awarded a winged cane lapel pin. This assignment was referred to as his "solo trip" and the award his "solo pin".

B. DEMONSTRATION

It appears from the plans of the Arkansas School for the Blind and the Arkansas Rehabilitation Services for the Blind, that the demonstration objectives of the project were well met. These agencies now agree that professional mobility and orientation training are essential to the

successful education and rehabilitation of blind individuals. They also agree that these services can be rendered as a part of their overall program of rehabilitation or education without interfering with the other phases of their services. Some problems did arise in the scheduling of training for the persons who entered the program, due to the fact that the training interfered with their other schedules set up by the counselor of the Rehabilitation Service for the Blind or the officials at the Arkansas School for the Blind. However, with careful planning and communication this problem can be overcome.

C. MOBILITY TECHNIQUES

Basic Skills

It is evident that this phase of the training program should receive as much emphasis as possible since the blind individual often has to revert to the use of these skills in unfamiliar situations. These skills were also important as they provided the initial pattern of successful experiences that encouraged the self-confidence needed to perform more difficult phases of training. The data indicates that, without exception, trainees will need some instruction in the basic skills, even if they appear to be moving rather competently in controlled, familiar situations. Another significant factor is that some of the techniques will be rejected initially by part of the school age group. Many seemed to feel some of the techniques were too conspicious. The instructor can expect these objections to diminish as the trainee begins to use the techniques and discovers that some benefits are to be gained from their selective use. The instructor may find that, in some cases, he will have to modify such techniques as the arm-across-the-chest or the use of a sighted guide to get the trainee to accept them. However, these situations appear to be rather infrequent and are the exception rather than the rule. It is well to mention that such resistance was rarely encountered with the adventitiously blind.

Cane Skills

The trained professional instructor may expect that a number of individuals have received instruction in an assortment of various cane techniques. The majority of these can be regarded as bad habits; and a great deal of demonstration will be required to motivate the trainee to accept the new techniques and reject the old ones. It was found that a majority of the trainees can learn the long cane technique without difficulty. The more frequently encountered difficulties will be the development of proper rhythm with the cane and the feet and that of making an arc of the proper width. However, with an adequate allotment of time for the development of these skills, almost any trainee not otherwise physically impaired can develop them. Even though the person who had other physical impairments could not meet the standards of good cane techniques, some modifications of the use of the techniques can be made and will allow for protection and mobility for the individual.

The diagonal technique seemed to be frequently used by trainees, especially in familiar situations. It is the opinion of the instructor that it should be a part of the training program, but that the trainees should be made aware of its limitations.

The stair technique may also need frequent modifications for those with poor balance and coordination as a result of physical impairment or other debilities.

Once the touch method of cane usage is learned, the trainee appears to feel confident and is able to gain enough information about the environment to navigate safely and efficiently.

Residential Skills

This is a highly important training area since a significant amount of the traveling done by the blind will be in such a situation. This appears to be a phase of training in which motivation and interest are high. The instructor planned these lessons, whenever possible, in areas where the trainee would actually have need of travel. This included trips to the bus stop, the grocery, the barber or beauty shop, or to the neighbors' houses. It might be well to note that the reactions of neighbors tended, at times, to inhibit the performance of the trainee. Tact was required to dismiss, or to effectively deal with, over-emotional statements regarding the trainee's blindness and his attempts to move about the neighborhood.

It appears that the independent street crossing skills will need more attention, particularly in the areas of proper alignment and direction taking. The problem of visualization and concept formation will also need special attention; and the instructor may find the use of Braille maps and raised-line drawing kits highly useful, when they are used as an adjunct to information gained through actual experience and not as the means to the end. The trainee may well regard this area as one of the more difficult phases of the entire course. Due to the lack of movement of other pedestrians and traffic, emphasis should be placed upon the use of permanent landmarks as means of orientation. This area is also important because of the image that a highly skilled blind person presents to his neighbors as he moves about his community. Therefore, much time and attention should be devoted to this phase of mobility.

Metropolitan Skills

It is apparent that not all persons accepted for training have the potential for the development of adequate skills in this advanced phase of training. Some will be capable of developing only a few skills in this area. Care should be taken to point out these limitations. As in residential mobility, independent street crossings and concept formation should be given the greatest amount of emphasis. Braille maps and raised

line drawing kits, along with actual experiences, seem to be the most desirable methods for the development of sufficient skills to cope with problems of this nature.

The more uniform layout of the downtown sections of most cities, when compared to that of residential areas, makes orientation and visualization less difficult. The most valuable aspect of this phase of training proved to be that of locating objectives by utilizing information pertaining to the city numbering system and street pattern. While it is realized that this information is not consistent from city to city, the techniques remain the same. This also provided an opportunity for trainees to orient themselves to unfamiliar areas and to successfully reach objectives. One auxiliary benefit of this type of assignment was the contact with employees of the various businesses visited. It would appear that the congenitally blind trainee did not make these contacts, while the adventitiously blind individual seems to shy away from contacts with strangers. However, as the trainees were supported and encouraged to make these contacts, their experiences grew, their inhibitions decreased, and they were able to gain valuable experience in communications with the sighted public.

D. MOBILITY AIDS

The Cane

The only type cane used in training purposes was the Arkansas Traveler type described earlier in this report. This description also points out the characteristics which a cane should possess in order to be an instrument capable of rendering the necessary information to the user. Tests conducted by the trainees and the instructor showed that the Arkansas Traveler cane met these specifications and was used by the majority of the persons in the training program. Other canes were also introduced to the trainees but only one chose a cane of another type. It would appear that this cane should be considered by the instructors and trainees. It offers some conservation of instruction time since it comes completely assembled and in varying lengths. The major problems presented by this cane was the fact that the tips had to be replaced occasionally.

The Sight Occluders

It appears that there are certain instances where the use of the sight occluders can be used effectively. This is especially true when the individual has a useful amount of residual vision but has not effectively learned to utilize auditory and tactual cues that would benefit him in orientation and mobility. It is the opinion of the instructor that sight occluders should be used only for this purpose. Occluders should be used only by persons with residual vision in an appropriate sequence of training exercises that focuses on interpreting clues by other senses than sight.

Braille Maps

Braille maps were used rather extensively when trainees were having problems with visualization. They were used as an aid to approaching the reality experience, or for interpreting the experience, but not as the sole method of instruction. The instructor chose to withdraw the use of such devices later in the training program since it was evident that their use could easily become a crutch to the blind traveler who would not have them readily available after the completion of the training program. The most effective use of these devices can be made in planning orientation and mobility training programs for the congenitally blind.

The Braille Compass

This instrument appears to be of little or no use to the blind traveler on foot. It is recommended that it be introduced to the blind person as an aid in mobility but that he should not rely upon it for a great amount of assistance in independent travel.

E. THE COST

The cost of isolated mobility and orientation training probably varies widely from one section of the country to another. Consequently a norm for this specialized service for this area is not known. The factors of time loss for the instructor in travel to and from the training station and loss due to inclement weather and unexpected illness of a trainee may have increased the cost, but such factors may reasonably be expected in such a project.

This project has demonstrated that mobility and orientation training is an expensive venture. The average cost per person completing training, including the grantor's and grantee's direct cost and the grantee's indirect costs for office space, equipment and utilities, which were less than ten percent, was $698.68. The average hourly cost for this service was $10.59.

MOBILITY AND ORIENTATION INSTRUCTION OF BLIND PEOPLE

SUMMARY AND CONCLUSIONS

Summary

On October 1, 1963, The Arkansas Enterprises for the Blind initiated a Research and Demonstration project, concerning the Orientation and Mobility needs of blind people. The project was made possible through a grant (RD-1328-SD) awarded by the Vocational Rehabilitation Administration, Department of Health, Education and Welfare, Washington, D. C. The project provided that the instructor would limit work to students from the Arkansas School for the Blind in Little Rock and referrals from the Arkansas Rehabilitation Service, living in Pulaski County.

The purpose of the project was to demonstrate the value of systematic teaching of validated skills in mobility to blind persons who had not previously had access to such training and to measure the results of the training program.

The trainees were to be given medical, social, and psychological examinations prior to the initiation of training, and were to possess rehabilitation potentials.

An instructor, with a master's degree in Orientation and Mobility of blind people from Western Michigan University was employed and instruction was begun.

The grant covered a period of three years during which time a total of sixty-seven blind persons received training and forty-eight of these completed the training program in Orientation and Mobility. Twenty-five of the individuals who entered the program were from the Arkansas School for the Blind and forty-two were referrals from the Arkansas Rehabilitation Service. The average age of the trainees was 23 years and six months. The average I.Q. was 114. Thirteen were partially sighted but legally blind. The average educational level was the tenth grade.

The instructor spent an average of sixty-six hours with each trainee who completed the program. Lessons were scheduled on a one hour per day basis and the average length of training was three months and one week. Thirty-four of the sixty-eight persons who entered the program indicated they had received some type of training previously, although further investigation indicated that it was not training on a formalized basis.

During the first year of the project, the instructor initially employed resigned to accept a position with another agency. After efforts failed to secure another instructor with a master's degree in orientation and mobility, an instructor with a B.A. degree and five years experience teaching mobility at the Arkansas Enterprises for the Blind, continued the training for the duration of the project.

Follow-up interviews were completed on forty of the sixty-seven trainees who participated in the program. These interviews were conducted by the social worker from the Arkansas Enterprises for the Blind Rehabilitation Center from six months to one year after the training was completed. The significant results of the follow-up were as follows:

1. Thirty-nine definitely felt that the training had been of benefit to them.
2. Thirty-eight felt that they were traveling more confidently and independently.
3. Thirty were doing their shopping and errands independently.
4. Twenty-seven reported that their training had positively altered their planning for the future.
5. Sixteen felt they could have benefitted from more training time.
6. All forty felt the instructors were capable ones.

Aside from the regular assignments previously mentioned, the instructor also provided some special services from time to time as the need became apparent. These included, the orientation of blind students to college campuses, the orientation of trainees to a general rehabilitation center located in Hot Springs, Arkansas, short-term orientation courses for supportive personnel of the Arkansas School for the Blind, Arkansas Rehabilitation Services for the Blind and the Arkansas Enterprises for the Blind, and the dissemination of general information of a public education nature.

The demonstration aspects of the project were highly successful. The Arkansas School for the Blind is presently seeking to employ a professionally trained Orientation and Mobility specialist in order to establish a Mobility and Orientation Program on a full time basis. The Arkansas Rehabilitation Services for the Blind has indicated that the mobility needs of their clients will be given full consideration in their rehabilitation planning. The Arkansas Enterprises for the Blind will continue to offer, as they have in the past, orientation and mobility training to all trainees when evaluation indicates such a need.

CONCLUSIONS

The following conclusions are based upon the findings and results of the three year orientation and mobility project:

1. That the value of systematic teaching of mobility and orientation skills on a formalized basis can be effectively demonstrated to those agencies not having established programs by careful planning and expert instruction.
2. The cost of such training will be somewhat greater in some areas than is anticipated. However, the value of such skills to blind people should be the first consideration of agencies planning such programs.
3. That all instruction should be provided on a daily basis, one hour of instruction daily.

4. That all training should be offered on a one-to-one instructor-trainee ratio.
5. That all training should be carefully planned and should follow a well organized lesson plan.
6. That some flexibility in lesson planning will be essential to allow for individual differences and needs.
7. That any one of three types of canes available is satisfactory for the training purposes--the V.A. cane, used by the blind section, Hines Hospital; the Arkansas Traveler type; or the SITE cane manufactured in Kansas. The trainee should be allowed to use all three types, and make his own decision as to the type that best meets his needs.
8. That the blindfold can be used with some partials; but its only value appears to be that of pointing out to the trainee how environmental information perceived through the senses other than vision can facilitate his use of his residual vision for mobility.
9. That raised line drawing kits and Braille maps can be used effectively early in the training program to develop the ability to visualize areas.
10. That the Braille compass is of very little value to orientation and mobility training.
11. That community based projects do offer an excellent means of accurately educating the public to the capabilities of blind people.
12. That those trainees receiving instructions become more independent and better motivated to accept further rehabilitation training and that such training tends to contribute to the blind person's self confidence and is invaluable in contributing to his image of himself as a capable, worthwhile member of society.

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